

**DECISION
AND
FINDING OF NO SIGNIFICANT IMPACT**

**WHITE-TAILED DEER
DAMAGE MANAGEMENT IN DELAWARE**

United States Department of Agriculture
Animal and Plant Health Inspection Service
Wildlife Services

The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA APHIS), Wildlife Services (WS) program responds to requests for assistance from individuals, organizations and agencies experiencing damage caused by wildlife. Ordinarily, according to APHIS procedures implementing the National Environmental Policy Act (NEPA), individual wildlife damage management actions may be categorically excluded (7 CFR 372.5(c), 60 Fed. Reg. 6000-6003, 1995). To evaluate and determine if any potentially significant impacts to the human environment from WS' planned and proposed program would occur, an environmental assessment (EA) was prepared. The EA documents the need for white-tailed deer (*Odocoileus virginianus*) damage management in Delaware and assessed potential impacts of various alternatives for responding to damage problems. The EA analyzes the potential environmental and social effects for resolving deer damage related to the protection of resources, and health and safety on private and public lands in Delaware. WS' proposed action is to implement an Integrated Wildlife Damage Management (IWDM) program on public and private lands in Delaware. Comments from the public involvement process were reviewed for substantive issues and alternatives which were considered in developing this decision.

Wildlife Services is the Federal program authorized by law to reduce damage caused by wildlife (Act of March 2, 1931, (46 Stat. 1468; 7 U.S.C. 426-426b) as amended, and the Act of December 22, 1987 (101 Stat. 1329-331, 7 U.S.C. 426c)). Wildlife damage management is the alleviation of damage or other problems caused by or related to the presence of wildlife, and is recognized as an integral part of wildlife management (The Wildlife Society 1992). WS uses an IWDM approach, commonly known as Integrated Pest Management (WS Directive 2.105) in which a combination of methods may be used or recommended to reduce damage. Wildlife Services wildlife damage management is not based on punishing offending animals but as one means of reducing damage and is used as part of the WS Decision Model (Slate et al. 1992, USDA 1997, WS Directive 2.201). The imminent threat of damage or loss of resources is often deemed sufficient for wildlife damage management actions to be initiated (U.S. District Court of Utah 1993). Resource management agencies, organizations, associations, groups, and individuals have requested WS to conduct deer damage management to protect resources and human health and safety in Delaware. All WS wildlife damage management activities are in compliance with relevant laws, regulations, policies, orders and procedures, including the Endangered Species Act of 1973.

Consistency

The analyses in the EA demonstrate that Alternative 5: 1) best addresses the issues identified in the EA, 2) provides safeguards for public health and safety, 3) provides WS the best opportunity to

reduce damage while providing low impacts on non-target species, 4) balances the economic effects to agricultural and natural resources, and property, and 5) allows WS to meet its obligations to government agencies or other entities.

Monitoring

The MD/DE/DC WS program will annually provide to the Delaware Department of Natural Resources and Environmental Control (DNREC) the WS lethal take of target and non-target animals to help ensure the total statewide take (WS and other take) does not impact the viability of target and non target wildlife species. In addition, the EA will be reviewed each year to ensure that it and the analysis are sufficient.

Public Involvement

The pre-decisional EA was prepared and released to the public for a 30-day comment period by a legal notice in the *Daily Banner* and *The News Journal*. The Legal Notice was placed in the newspapers for two days (February 16 and 17, 2006). A letter of availability for the pre-decisional EA was also mailed directly to agencies, organizations, and individuals with probable interest in the proposed program. One comment document was received from the public during the comment period. All comments were analyzed to identify substantial new issues, alternatives, or to re-direct the program. Responses to specific comments are included in Appendix A. Based upon these comments, several minor editorial changes have been incorporated into the EA. These minor changes enhanced the understanding of the proposed program, but did not change the analysis provided in the EA. All letters are maintained in the administrative file located at the Wildlife Services State Office in Annapolis, Maryland.

Major Issues

The EA describes the alternatives considered and evaluated using the identified issues. The following issues were identified as important to the scope of the analysis (40 CFR 1508.25).

- Effects on White-tailed Deer Populations
- Effects on Plants and Other Wildlife Species, including T&E Species
- Effects on Human Health and Safety
- Humaneness of Methods to be Used
- Effects on Aesthetic Values
- Effects on Regulated White-tailed Deer Hunting

Affected Environment

The areas of the proposed action include, but are not limited to, property on or adjacent to airports, recreational areas, parks, corporate complexes, subdivisions, businesses, industrial parks, schools, agricultural areas, and cemeteries. The proposed action may be conducted on properties held in private, local, state or federal ownership.

Alternatives That Were Fully Evaluated

The following five alternatives were developed to respond to the issues. Two additional alternatives were considered but not analyzed in detail. A detailed discussion of the effects of the Alternatives on the issues is described in the EA; below is a summary of the Alternatives.

Alternative 1: No Deer Damage Management by WS

This alternative would eliminate WS involvement in all deer damage management activities. WS would not provide direct operational or technical assistance and requesters of WS services would have to conduct their own deer damage management without WS input.

Alternative 2: Technical Assistance Only (No Action Alternative)

This alternative would only allow MD/DE/DC WS to provide technical assistance to individuals or agencies requesting deer damage management. Individuals might choose to implement WS lethal and non-lethal recommendations, implement methods not recommended by WS, use contractual services of private businesses, or take no action.

Alternative 3: Lethal Deer Damage Management only by WS

Under this alternative, WS would provide only lethal direct control services and technical assistance. Requests for information regarding non-lethal management approaches would be referred to the DNREC, local animal control agencies, or private businesses or organizations. Individuals might choose to implement WS lethal recommendations, implement non-lethal methods or other methods not recommended by WS, contract for WS lethal direct control services, use contractual services of private businesses, or take no action.

Alternative 4: Non-lethal Deer Damage Management only by WS

This alternative would require WS to use and recommend non-lethal methods only to resolve all deer damage problems. Requests for information regarding lethal management approaches would be referred to the DNREC, local animal control agencies, or private businesses or organizations. Persons incurring deer damage could still resort to lethal methods or other methods not recommended by WS, use contractual services of private businesses that were available to them, or take no action.

Alternative 5: Integrated Deer Damage Management Program (Preferred Alternative)

Under this alternative, Wildlife Services would implement a damage management program that responds to requests for white-tailed deer damage assistance in the State of Delaware. An IWDM approach would be implemented in consultation and coordination with the DNREC to alleviate white-tailed deer damage to agriculture, property, natural resources, and human health and safety on all private and public lands of Delaware where a need exists, a request is received, and funding is available. An IWDM strategy would be recommended and used, encompassing the use of practical and effective methods of preventing or reducing damage while minimizing harmful effects of damage management measures on humans, white-tailed deer, other species, and the environment. Under this action, WS would provide technical assistance and operational damage management, including non-lethal and lethal management methods by applying the WS Decision Model (Slate et al. 1992). When appropriate, habitat modifications, harassment, repellants, and physical exclusion could be recommended and utilized to reduce deer damage. In other situations, deer would be removed as humanely as possible by sharpshooting and live capture followed by euthanasia under permits issued by the DNREC. In determining the damage management strategy, preference would be given to practical and effective non-lethal methods. However, non-lethal methods may not always be applied as a first response to each damage problem. The most appropriate response could often be a combination of non-lethal and lethal methods, or there could be instances where application of lethal methods alone would be the most appropriate strategy.

Deer damage management would be conducted in the state, when requested, on private or public property after an *Agreement for Control* or other comparable document has been completed. All deer damage management would be consistent with other uses of the area and would comply with appropriate federal, state and local laws.

Alternative Considered but not Analyzed in Detail:

Live Trapping and Relocation

Under this alternative WS would capture deer alive using cage-type live traps or capture drugs administered by dart gun and then relocate the captured deer to another area. Numerous studies have shown that live-capture and relocation of deer is relatively expensive, time-consuming and inefficient (Ishmael and Rongstad 1984, O'Bryan and McCullough 1985, Diehl 1988, Jones and Witham 1990, Ishmael et al. 1995). Population reduction achieved through capture and relocation is labor intensive and would be costly (\$273-\$2,876/deer) (O'Bryan and McCullough 1985, Bryant and Ishmael 1991). Additionally, relocation frequently results in high mortality rates for deer (Cromwell et al. 1999, O'Bryan and McCullough 1985, Jones and Witham 1990, Ishmael et al. 1995). Deer frequently experience physiological trauma during capture and transportation, (capture myopathy) and deer mortality after relocation, from a wide range of causes within the first year, has ranged from 25-89% (Jones and Witham 1990, Mayer et al. 1993). O'Bryan and McCullough (1985) found that only 15% of radio-collared black-tailed deer that were live-captured and relocated from Angel Island, California, survived for one year after relocation. Although relocated deer usually do not return to their location of capture, some do settle in familiar suburban habitats and create nuisance problems for those communities (Bryant and Ishmael 1991). High mortality rates of relocated deer, combined with the manner in which many of these animals die, make it difficult to justify relocation as a humane alternative to lethal removal methods (Bryant and Ishmael 1991). Chemical Capture methods require specialized training and skill. A primary limitation of darting, the limited range at which deer can be effectively hit, is generally less than 40 yards. With modern scoped rifles, however, a skilled sharpshooter can hit the head or neck of a deer for a quick kill out to 200 yards and beyond (although a shot over 200 yards is not very likely). Thus, chemical capture is far less efficient, more labor intensive, and much more costly than lethal removal with rifles.

Translocation of wildlife is discouraged by WS policy (WS Directive 2.501) because of stress to the relocated animal, poor survival rates, potential for disease transfer and difficulties in adapting to new locations or habitats. Also many states no longer permit the interstate transfer of deer due to recent concerns of chronic wasting disease outbreaks. If CWD is already present in Delaware relocating deer within the state could serve to vector the disease.

Population stabilization through birth control

Reproductive control is often considered for use where wildlife populations are overabundant and where traditional hunting or lethal control programs are not publicly acceptable (Muller et al. 1997). Use and effectiveness of reproductive control as a wildlife population management tool is limited by population dynamic characteristics (longevity, age at onset of reproduction, population size and biological/cultural carrying capacity, etc.), habitat and environmental factors (isolation of target population, cover types, and access to target individuals, etc.), socioeconomic and other factors. Population modeling indicates that reproductive control is more efficient than lethal

control only for some rodent and small bird species with high reproductive rates and low survival rates (Dolbeer 1998). Additionally, the need to treat a sufficiently large number of target animals, multiple treatments, and population dynamics of free-ranging populations place considerable logistic and economic constraints on the adoption of reproduction control technologies as a wildlife management tool for some species.

Reproductive control for wildlife could be accomplished either through sterilization (permanent) or contraception (reversible, initial treatment usually followed by a booster and annual follow-up treatments). Sterilization could be accomplished through: 1. Surgical sterilization (vasectomy, castration, and tubal ligation), 2. Chemosterilization, and 3. Gene therapy. Contraception could be accomplished through: 1. Hormone implantation (synthetic steroids such as progestins), 2. Immunocontraception (contraceptive vaccines), and 3. Oral contraception (progestin administered daily). Research into the use of these techniques would consist of laboratory/pen experimentation to determine and develop the sterilization or contraceptive material or procedure, field trials to develop the delivery system, and field experimentation to determine the effectiveness of the technique in achieving population reduction.

The use of hormones was investigated (Matschke 1976, 1977 a, b, c, and Roughton 1979), and eventually rejected as an effective and efficient reproductive control technique for deer. Additionally, concerns related to costs and logistics of widespread distribution of drugged baits, dosage control and ingestion of baits by children and nontarget animals make oral contraception (by steroids) largely impractical (Lowery et al. 1993). More recently, Immunocontraception has been studied in various situations and locations, but its potential use appears limited due to considerable constraints regarding treatment and follow-up treatment of a sufficiently large number of target animals, varying immunogenicity of vaccines, genetic backgrounds of individual animals, age, nutritional status, stress and other factors (Becker et al. 1997, Becker et al. 1999). The use of porcine zona pellucida (PZP) as a contraceptive agent in wildlife management has been investigated recently (Kirkpatrick et al. 1990, Turner and Kirkpatrick 1991, Turner et al. 1992, and Turner et al. 1996), but to date, there is no published documentation that immunocontraceptive vaccines have successfully reduced any free-ranging white-tailed deer herd or population.

USDA National Wildlife Research Center (NWRC) scientists have developed GonaCon™, a new single dose immunocontraceptive vaccine that shows great promise as a wildlife infertility agent. Recent studies have demonstrated the efficacy of this single-shot GnRH vaccine on California ground squirrels, Norway rats, feral cats and dogs, feral swine, wild horses and white-tailed deer. Infertility among treated female swine and white-tailed deer lasted up to 2 years without requiring a booster vaccination (Miller et al. 2000). This vaccine overcomes one of the major obstacles of previous two dose vaccines, the need to only capture animals once to vaccinate them. A single-injection vaccine is much more practical as a field delivery system for use on free-ranging animals.

Ongoing studies initiated by NWRC in 2004, are examining the practicality of administering GonaCon™ to free-ranging white-tailed deer as well as the efficacy, toxicity and safety of the vaccine. No fertility control agents have been approved by FDA for non-investigational use on wildlife populations in the U.S. Several materials, however, including GnRH and PZP vaccines, have been classified as investigational drugs that may be used only in rigidly controlled research

studies. NWRC studies that are underway at several locations are being conducted as pivotal studies that are required as part of FDAs approval process for a new animal drug.

The single-shot, multiyear vaccine will be a useful technique for the management of enclosed or urban/suburban deer populations. However, GonaCon™ still has limitations, especially the need to capture and inject each animal. Scientists are hopeful that the GnRH vaccine will soon be approved for wildlife fertility control. If and when this vaccine is proven effective and safe to use for free-ranging white-tailed deer in Delaware, this EA and its analysis would be supplemented pursuant to NEPA at that time.

Turner et al. (1993) noted that although contraception in white-tailed deer may be used to limit population growth, it will not reduce the number of deer in excess of the desired level in many circumstances. They further contend that initial population reductions by various other means may be necessary to achieve management goals, and that reproduction control would be one facet of an integrated program. In sum, although immunocontraceptive technology has been variously effective in laboratories, pens, and in island field applications, it has not been effective in reducing populations of free-ranging white-tailed deer.

The use of this method would be subject to approval by Federal and State Agencies. This alternative was not considered in detail because:

- it would take a number of years of implementation before the deer population would decline and therefore, damage would continue at the present unacceptable levels for a number of years;
- surgical sterilization would have to be conducted by licensed veterinarians, and would therefore be extremely expensive;
- it is difficult, time-consuming, and expensive to effectively live trap, chemically capture, or remotely treat the number of deer necessary to effect an eventual decline in the population; and
- State and Federal regulatory authorities have approved no chemical or biological agent for use as a deer contraceptive.

Finding of No Significant Impact

The analysis in the EA indicates that there will not be a significant impact, individually or cumulatively, on the quality of the human environment as a result of this proposed action. I agree with this conclusion and therefore find that an EIS need not be prepared. This determination is based on the following factors:

1. White-tailed deer damage management as conducted by WS in Delaware is not regional or national in scope.

2. The proposed action would pose minimal risk to public health and safety. Risks to the public from WS methods were determined to be low in a formal risk assessment (USDA 1997, Appendix P).
3. There are no unique characteristics such as park lands, prime farm lands, wetlands, wild and scenic areas, or ecologically critical areas that would be significantly affected. Built-in mitigation measures that are part of WS's standard operating procedures and adherence to laws and regulations will further ensure that WS activities do not harm the environment.
4. The effects on the quality of the human environment are not highly controversial. Although there is some opposition to wildlife damage management, this action is not highly controversial in terms of size, nature, or effect.
5. Based on the analysis documented in the EA and the accompanying administrative file, the effects of the proposed damage management program on the human environment would not be significant. The effects of the proposed activities are not highly uncertain and do not involve unique or unknown risks.
6. The proposed action would not establish a precedent for any future action with significant effects.
7. No significant cumulative effects were identified through this assessment. The number of deer killed by WS, when added to the total known other take, would fall within population management objectives established by the Delaware Department of Natural Resources and Environmental Control. The EA discussed cumulative effects of WS on target and non-target species populations and concluded that such impacts were not significant for this or other anticipated actions to be implemented or planned within the State.
8. The proposed activities would not affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, nor would they likely cause any loss or destruction of significant scientific, cultural, or historical resources.
9. WS has determined that the proposed project would not adversely affect any Federal or Delaware State listed threatened or endangered species.
10. The proposed action would be in compliance with all federal, state, and local laws.

Decision and Rationale

I have carefully reviewed the Environmental Assessment prepared for this proposal and the input from the public involvement process. I believe that the issues identified in the EA are best addressed by selecting Alternative 5 (Integrated Deer Damage Management Program (Preferred Alternative)) and applying the associated Standard Operating Procedures discussed in Chapter 3 of the EA. Alternative 5 is selected because (1) it offers the greatest chance at maximizing effectiveness and benefits to resource owners and managers while minimizing cumulative impacts on the quality of the human environment that might result from the program's effect on target and non-target species populations; (2) it presents the greatest chance of maximizing net benefits while

minimizing adverse impacts to public health and safety; and, (3) it offers a balanced approach to the issues of humaneness and aesthetics when all facets of these issues are considered. The comments identified from public involvement were minor and did not change the analysis. Therefore, it is my decision to implement the preferred alternative as described in the EA.

Copies of the EA are available upon request from the MD/DE/DC Wildlife Services Office, 1568 Whitehall Road, Annapolis, MD 21401.



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APHIS-WS Eastern Region

3-22-06

Date

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Appendix A
Response to Comments to the Environmental Assessment
“White-tailed Deer Damage Management in Delaware”

Issue 1: *The commentor did not agree with the management approach that the Delaware Department of Natural Resources and Environmental Control uses to manage the white-tailed deer population/herd in Delaware.*

Program Response 1: Wildlife Services has no legal authority to manage white-tailed deer populations in Delaware. As presented in Section 1.7 of the EA, WS is authorized by law to protect American agriculture and other resources from damage associated with wildlife, including white-tailed deer. White-tailed deer are considered a resident wildlife species in Delaware and are classified as protected big game. White-tailed deer are managed under State authority without any federal oversight or protection. The authority for management of resident wildlife species in Delaware is the responsibility of the DNREC. The DNREC collects and compiles information on white-tailed deer population trends and take, and uses this information to manage deer populations.

Issue 2: *Deer that are killed during damage management activities should be utilized for human consumption and not allowed to go to waste.*

Program Response 2: Wildlife Services agrees that deer killed for damage management purposes should be, whenever possible, utilized for human consumption. The venison from deer killed by WS would be, when possible, processed by a USDA approved meat processor and donated for human consumption, at one or more charitable organizations.

Issue 3: *White-tailed deer population management strategies that do not involve disease issues should not occur during the summer months. Deer populations should be reduced during the winter months.*

Program Response 3: White-tailed deer damage and conflicts occur year-round in Delaware. As described in Section 3.3.5 of the EA, WS uses a Decision Model (Slate et al. 1992) to determine the appropriate course of action to reduce deer damage and conflicts at the site specific level. This may involve reducing or suppressing a local deer population any time of the year. The DNREC has the legal authority to manage white-tailed deer populations in Delaware, including where and when deer damage management actions take place. As described in the proposed action, WS lethal deer damage management activities will be conducted under permits issued by the DNREC.

Issue 4: *The use of lethal methods to manage white-tailed deer damage should be limited to those areas where a need exists.*

Program Response 4: As described in Section 3.3.5 of the EA, WS uses a Decision Model (Slate et al. 1992) to determine the appropriate course of action to reduce deer damage and conflicts at the site specific level. WS personnel assess the problem and evaluate the appropriateness and availability (legal and administrative) of strategies and methods based on biological, economic and social considerations. Following this evaluation, the methods deemed to be practical for the

situation are developed into a management strategy. After the management strategy has been implemented, monitoring is conducted and evaluation continues to assess the effectiveness of the strategy.

Issue 5: *Sport hunting should be utilized to reduce white-tailed deer damage and conflicts.*

Program Response 5: Deer hunting is regulated by the DNREC and is a valuable management tool to assist the State in maintaining a healthy and productive deer herd. While regulated deer hunting may at times be used to reduce damage and conflicts at a local level, at times it may not be available for use due to local ordinances and laws prohibiting such activities or hunting may not be allowed at the time of year that damage is occurring. In these circumstances and others, DNREC has the legal authority to issue permits to lethally remove deer that are causing damage and conflicts. Section 1.7 of the EA provides information on pertinent laws and regulations that WS uses to manage deer damage in Delaware.

Issue 6: *Why is Wildlife Services using 600 deer as the number of deer that the program may killed on an annual basis? Is the lethal removal of 600 deer based upon a specific project?*

Program Response 6: WS program expects that no more than 600 deer would be lethally removed annually under permits issued by the DNREC, while conducting WS direct control activities to protect human health, human safety, property, natural resources and agriculture on private land or public facilities whenever or wherever such management is requested from the WS program in Delaware. This number was selected based upon past and anticipated future requests for WS deer damage management assistance and is not directly linked to a site specific project.